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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/410,249	09/30/1999	DEBEBE A. ALAMINEH	119-045-ALAM	6580

7590 11/20/2002

GREGORY A WELTE
806 NORTH COUNTY ROAD
700 WEST
FRANKFORT, IN 46041

EXAMINER

JAGANNATHAN, MELANIE

ART UNIT	PAPER NUMBER
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2666

DATE MAILED: 11/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/410,249

Applicant(s)

ALAMINEH, DEBEBE A.

Examiner

Melanie Jagannathan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 1999.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims **6-10** are rejected under 35 U.S.C. 102(b) as being anticipated by Perlman et al. U.S. Patent Number 5,128,926.

Regarding claim 6, the claimed method of, at an originating node, generating a message which reports a change in status of a link and transmitting the message to the neighbors of the originating node is anticipated by a link state packet, originated from a given node, indicating the states of links in the network being sent to a node and then transmitted to the other nodes in the network. See column 3, lines 29-56. The claimed step in the method of, at each neighbor, storing the message if the neighbor does not know of the change and the transmitting the message to neighbors of the neighbor (as in claim 6) is anticipated by the nodes storing the information from the link state packets for use in routing packets and then the message being transmitted to the next nodes in the network. See column 3, lines 35-38 and lines 43-56.

Regarding claim 7, the claimed step of the neighbors not transmitting acknowledgment of receipt of the message is anticipated by link state information being assembled into fragments and the node using the link state information from a fragment sent to them without regard to whether or not the other fragments are successfully received at the node. The node does not

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transmit an acknowledgment about the receipt of all the fragments sent. See column 3, lines 17-25.

Regarding claim 8, the claimed message being assigned an age is anticipated by a link state packet being generated with a field containing a sequence number indicating the relative age of the packet. Regarding claims 8 and 9, the claimed neighbor of the node and the neighbors of the neighbor decrementing the age prior to transmission is anticipated by each node, upon generating a link state packet to transmit to other nodes for updating use, including a different sequence number indicating the relative age of the packet. See column 5, lines 63-68 and column 6, lines 1-6.

Regarding claim 10, the claimed neighbor discarding the message if the neighbor has previously received the message is anticipated by the router (Figure 4, element 13) once receiving a fragment searching through the stored fragments to see if it received and discarding if it already has it or if it has newer information. See column 6, lines 7-21.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perlman et al. U.S. Patent Number 5,128,926 in view of Crawley et al. U.S. Patent Number 5,995,503.

Regarding claim 1, the claimed step of at each node, examining status of links connecting to the node and if a change is detected, flooding the network with news of the change in messages which are self-propagating and self-terminating is anticipated by Perlman et al. in that link state packets are generated containing link status information that are transmitted to the nodes in the network and each node updating its routing table with the information and sending out an updated message (message is self-propagating and the old message is terminated). See column 3, lines 21-56. However, Perlman does not disclose the step of repeatedly examining the status of links connecting to a node. Crawley et al. discloses a method involving a determination of whether the status of a link in the network has changed (Figure 4, step 152). If a change is detected, a message is generated and broadcast (Figure 4, step 156) and then the steps are repeated to identify the next change in link status. See column 5, lines 54-67 and column 6, lines 1-7. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to repeat the steps of determining link status change. A person of ordinary skill in the art would be motivated to do this as it allows for continuous update on any failures in the network.

Regarding claim 2, the claimed nodes not acknowledging receipt of the message is anticipated by Perlman where nodes using the link state information from a fragment sent to them without regard to whether or not the other fragments are successfully received at the node. The node does not transmit an acknowledgment about the receipt of all the fragments sent. See column 3, lines 17-25.

Regarding claim 3, the claimed flooding of the network with news of the existing status when no change in the status of the link is detected is anticipated by Perlman where the first node

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updates its table with the information from the link state packet indicating if all or only some of the links are operable and then the packet is sent to the next node for update. See column 3, lines 31-56.

Regarding claim 4, Perlman discloses all the limitations of the claims except for the repeating of the steps involving examining status of links and flooding the network with news of the change in messages if a change is detected after the step of flooding the network with news of the existing status when no change is detected. Crawley et al. discloses a method involving a determination of whether the status of a link in the network has changed (Figure 4, step 152). If a change is detected, a message is generated and broadcast (Figure 4, step 156) and then the steps are repeated to identify the next change in link status. See column 5, lines 54-67 and column 6, lines 1-7. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to repeat the steps of determining link status change after flooding the network with news of the existing status if no change is detected. A person of ordinary skill in the art would be motivated to do this as it allows for nodes to be updated that all the links are still operating correctly and also allows for continuous update on any failures in the network if any are detected.

Regarding claim 5, the claimed method of generating a message which reports a change in status of a link and transmitting the message to all the nodes in the network is anticipated by a link state packet, originated from a given node, indicates the states of links in the network being sent to a node and is subsequently transmitted to the other nodes in the network. See column 3, lines 29-56. The claimed replacing of propagating reports with new reports and propagating the new reports to all the nodes (as in claim 5) is anticipated by if a link connected to a given node

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changes from a first state to a second state and if not previously indicated a replacement packet is generated conveying the state change. See column 4, lines 3-19. Perlman does not disclose repeating the steps of generating new reports and propagating them to all the nodes in the network. Crawley et al. discloses a method of repeating steps of generating link status changes and transmitting to nodes in the network. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to repeat the steps of generating and propagating new reports. A person of ordinary skill in the art would be motivated to do this as it allows for continuous update on any new failures in the network as they are detected.

Regarding claim 11, the claimed method of generating a message which reports a change in status of a link and transmitting the message to all the nodes in the network is anticipated by Perlman where a link state packet, originated from a given node, indicates the states of links in the network being sent to a node and is subsequently transmitted to the other nodes in the network. See column 3, lines 29-56. The claimed step of not transmitting acknowledgment of receipt of the message is anticipated by the link state information assembled in fragments and the node using link state information from a fragment sent to them without regard to whether or not the other fragments are successfully received at the node. The node does not transmit an acknowledgment about the receipt of all the fragments sent. See column 3, lines 17-25. However, Perlman does not disclose a method including steps, which cause termination of propagation after all the nodes have received the message. Crawley et al discloses a method involving a determination of whether the status of a link in the network has changed (Figure 4, step 152). If a change is detected, a message is generated and broadcast (Figure 4, step 156) to all the nodes. After the message is broadcast to all the nodes, the steps are repeated to identify

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the next change in link status, which will terminate the step of propagation of the message. See column 5, lines 54-67 and column 6, lines 1-7. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include steps to terminate the propagation of the message. A person of ordinary skill in the art would be motivated to do this as it allows for the detection and propagation of new status changes.

Regarding claim 12, the claimed replacing of propagating reports with new reports is anticipated by Perlman where if a link connected to a given node changes from a first state to a second state and if this state change is not previously indicated a replacement packet is generated conveying the state change. See column 4, lines 3-19.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Perlman et al. U.S. Patent Number 4,864,559 discloses a method of multicasting message distribution.

Callon U.S. Patent Number 5,251,205 discloses a multiple protocol routing method where the routers share link status information.


Huang et al. U.S. Patent Number 6,308,282 discloses an apparatus and method for providing fault tolerance.

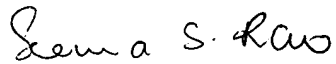
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Jagannathan whose telephone number is 703-305-8078. The examiner can normally be reached on Monday-Friday from 8:00 a.m.-4:30 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 703-308-5463. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9315 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

MJ 
November 15, 2002


Seema S. Rao
Supervisory Patent Examiner
AU 2666
November 15, 2002